

**FILE IN** Expandable 11 20 2006  
**Refer to Record No.** 0094  
**in** 0090039, 2006, Incoming  
**for additional information**

## CHAPTER 1

### LEGAL, FINANCIAL, COMPLIANCE AND RELATED INFORMATION

Section 28: NW1/4, N1/2SW1/4, SW1/4SW1/4  
Section 29: All  
Section 30: E1/2, E1/2W1/2

#### Waste Rock Storage Facility

T. 14 S., R. 12 E., SLBM, Utah (Approximately 26.8 acres)

Section 18: Portions of NE1/4, SW1/4 and SE1/4 of the NE1/4

All of Lease ML-42648, except the E1/2 of Section 8 and the NE1/4 of Section 17, is included within the Dugout Canyon Mine permit boundary. However, only the S1/2 SE1/4 of Section 9 from Lease ML-42649 is within the permit boundary. The ten acres described in UTU-76601 are also described in UTU-77985. The U.S. Department of Interior, Bureau of Land Management (BLM) right-of-way application UTU-76601 is included in Appendix 1-3.

The disturbed area encompasses 20.80 acres (Mine Facility area, including Gilson well pad and small substation), 24.85 acres (G-2, G-3, G-4, G-5, G-6, G-7, G-9, G-10, G-11, G-12, G-13, G-14, G-15, G-16 and G-17 Degas Well), 2.7 acres (G-4, G-5 and G-6 Degas Well), 1.8 acres (Leach field/pipeline area), 2.7 acres (Pace Canyon Fan Facility) and 26.8 acres (Refuse Pile area) totaling approximately 77 acres. That acreage includes a pre- and post mining road with an area of 1.6 acres and 2.03 acres of undisturbed land within the mine facilities disturbed area and 11.2 acres within the refuse pile disturbed area.

The permit boundary encompasses approximately 9,471 acres which includes the following surface ownership and acreage: 10 acres in the BLM right-of-way, approximately 567 acres of other federal lands, 920 acres of state lands, and fee acreage of approximately 7,974 acres (Plate 1-1 and RA Plate 1-1).

Coal ownership acreage within the permit area includes approximately 2,804 acres of federal coal, approximately 5840 acres of state coal, and 827 acres of fee coal (Plate 1-2 and RA1-1B). Approximately 745 acres which include the surface subsidence area, refuse pile and leach field areas will not be mined although their acreage is included in the surface and coal ownership acreage totals.

A legal description of the permit boundary includes:

Canyon Fuel Company, LLC  
SCM/Dugout Canyon Mine

Mining and Reclamation Plan  
**November 20, 2006** ~~June 2005~~

## **APPENDIX 1-4**

### **Disturbed Area Legal Description**

LEGAL DESCRIPTION OF BONDED AREA:

Waste Rock Storage Facility

T. 14 S., R. 12 E., SLBM, Utah (Approximately 26.8 acres)

Section 18: Portions of NW1/4NE1/4NE1/4  
Portions of NE1/4NE1/4NE1/4  
Portions of SW1/4NE1/4NE1/4  
Portions of SE1/4NE1/4NE1/4  
Portions of NW1/4SE1/4NE1/4

Leachfield and Pipeline

T. 13 S., R. 12 E., SLBM, Utah (Approximately 1.8 acres)

Section 22: Portion of SE1/4SE1/4NE1/4SE1/4  
Portion of NE1/4SE1/4NE1/4SE1/4  
Portion of N1/2NE1/4SE1/4SE1/4;  
Portion of SW1/4NE1/4SE1/4SE1/4;  
Portion of S1/2NW1/4SE1/4SE1/4;  
Portion of SE1/4NE1/4SW1/4SE1/4;  
Portion of N1/2SE1/4SW1/4SE1/4;  
Portion of NE1/4SW1/4SW1/4SE1/4;  
Portion of S1/2SW1/4SW1/4SE1/4  
Section 23: Portion of SW 1/4NW1/4NW1/4SW1/4;  
Portion of SE1/4NW1/4NW1/4SW1/4;  
Portion of NW1/4SW1/4NW1/4SW1/4;  
Section 27: Portion of W1/2NW1/4NW1/4NE1/4  
Portion of SE1/4NE1/4NE1/4NW1/4  
Portion of E1/2SE1/4NE1/4NW1/4  
Portion of SW1/4SE1/4NE1/4NW1/4

Main Facilities Area T. 13 S., R. 12 E., SLBM, Utah (Approximately 20.80 acres)

Section 23: A Portion of the following:  
NE1/4NE1/4NW1/4SW1/4; NE1/4NW1/4NW1/4SW1/4;  
NW1/4NE1/4NW1/4SW1/4; SW1/4SE1/4SW1/4NW1/4;  
SE1/4SE1/4SW1/4NW1/4; NW1/4SE1/4SW1/4NW1/4;  
NE1/4SE1/4SW1/4NW1/4; SW1/4SW1/4SE1/4NW1/4;  
SE1/4SW1/4SE1/4NW1/4; NW1/4SW1/4SE1/4NW1/4;  
NE1/4SW1/4SE1/4NW1/4; SW1/4NW1/4SE1/4NW1/4;  
SE1/4NW1/4SE1/4NW1/4; NE1/4NW1/4SE1/4NW1/4;  
SW1/4NE1/4SE1/4NW1/4; NW1/4NE1/4SE1/4NW1/4;  
NE1/4NE1/4SE1/4NW1/4; W1/2SE1/4NE1/4NW1/4;  
SW1/4NE1/4NE1/4NW1/4; NW1/4NE1/4NE1/4NW1/4;  
NE1/4NE1/4NE1/4NW1/4

Section 14: A Portion of the following:  
SE1/4SE1/4SE1/4SW1/4;  
NE1/4SE1/4SE1/4SW1/4;

NW1/4SW1/4SW1/4SE1/4

G-2 Thru G-12 Degas Well, (Approximately 24.85 acres)

G-2	Portion of N1/2SW1/4NE1/4 Section 24	Township 13 South, Range 12 East, SLBM
G-3	Portion of N1/2SW1/4NW1/4 Section 19	Township 13 South, Range 13 East, SLBM
G-4	Portion of N1/2NE1/4NW1/4 Section 24	Township 13 South, Range 12 East, SLBM
G-5	Portion of N1/2NW1/4NE1/4 Section 24	Township 13 South, Range 12 East, SLBM
G-6	Portion of S1/2SW1/4NW1/4 Section 18	Township 13 South, Range 13 East, SLBM
G-7	Portion of SW1/4NE1/4SE1/4 Section 24	Township 13 South, Range 12 East, SLBM
G-9	Portion of NW1/4NW1/4SW1/4 Section 21	Township 13 South, Range 13 East, SLBM
G-10	Portion of NE1/4NE1/4SE1/4 Section 20	Township 13 South, Range 13 East, SLBM
G-11	Portion of NE1/4SE1/4SW1/4 Section 20	Township 13 South, Range 13 East, SLBM
G-12	Portion of SE1/4NW1/4SW1/4 Section 20	Township 13 South, Range 13 East, SLBM
G-13	Portion of NW1/4NE1/4SE1/4 Section 19	Township 13 South, Range 13 East, SLBM
G-14A	Portion of SW1/4SW1/4SE1/4 Section 17	Township 13 South, Range 13 East, SLBM
G-15	Portion of NW1/4SE1/4NE1/4 Section 19	Township 13 South, Range 13 East, SLBM
G-16	Portion of SW1/4SE1/4SE1/4 Section 18	Township 13 South, Range 13 East, SLBM
G-17	Portion of SE1/4NW1/4SE1/4 Section 18	Township 13 South, Range 13 East, SLBM

Pace Canyon Fan Facility Township 13 South, Range 13 East, SLBM (Approximately 2.7 acres)  
Section 30: Portion of E1/2NW1/4NW1/4

Total Approximately 77 Acres

## CHAPTER 3

### BIOLOGY



### **330 OPERATION PLAN**

#### **331 Measures Taken to Disturb the Smallest Practicable Area**

No vegetative disturbance is anticipated beyond that encountered during construction of the surface facilities and fan facilities. The area to be disturbed by operational facilities will be kept to a minimum. Only facilities required to maintain the coal operation or satisfy environmental or safety requirements will be built.

Disturbed areas will be seeded with a mixture which will meet the requirements necessary to stabilize and provide cover; and with sufficient production and diversity characteristic to satisfy regulatory requirements.

Sections 341 describes the seed mixes to be used in both interim and final reclamation of the disturbed areas. For both the interim and final reclamation mixes, the vegetation data were evaluated to determine seed mixture constituents in light of production, cover, and diversity requirements. The soils report was reviewed to select species adapted to the soil's physical and chemical condition. Plant species were selected on the basis of wildlife needs and requirements. In addition, the operations plan was reviewed to determine the need for species with quick establishment, rapid spreading, and high erosion control potentials.

An area of approximately 0.5 acres will be added to the disturbed area at the mine's facilities in Dugout Canyon. The topsoil and vegetation will be stripped from the area to be disturbed and stockpiled at the topsoil storage area in Soldier Canyon. The area to be disturbed was previously inventoried by Mt. Nebo Scientific in 1996. In the 1996 report the *Acer grandidentatum* was the primary tree in the area to be disturbed. Junipers are mixed with the *Acer grandidentatum* within this 0.5 acres of additional disturbance.

#### **332 Description of Anticipated Impacts of Subsidence**

## CHAPTER 2

### SOILS



Soils present in the narrow V-shaped Dugout Canyon that lie within the disturbed area of the mine have been identified and characterized. A large portion of the mine area is covered with overburden that consists of soil mixed with coal waste and/or waste rock from previous mining operations at the site. In these areas, the original soil structure has been obliterated or the native soils have been deeply covered. The remainder of the disturbed area has soils that appear to be in-place or have been only slightly disturbed. The approximate boundary between the overburden and in-place and/or slightly disturbed soils is illustrated on Plate 2-2. The overburden has been labeled on Plate 2-2 as OB while the in-place soils have been labeled as TS.

The overburden is a mixture of rock and/or coal waste with Travessilla soils. The Travessilla soils are classified as loamy, mixed (calcareous) mesic, Lithic Ustic Torriorthents (Jensen, 1988). Soil type TS is a loamy, mixed, Typic Haploboroll.

In Pace Canyon the site is mapped as being soil map Unit 96 and the adjacent soils being map Units 21, 84 and 97 (SCS, 1988).

The expansion of the disturbed area by approximately 0.50 acres could include soil mapping Units 96 and 21 according to Plate 2-1. The soils appear to be native with surficially disturbed soils and similar to the soils inventoried from test pit TP-5.

### **222.300 Soil Description**

The description of the soils has been based on the following information: taxonomic classification, horizon name and depth, color, texture (percent sand, silt, and clay), class, structure, percent rock fragments and organic matter, pH, EC, and solubility of calcium, magnesium, and sodium. This information is included in the soil test pit logs in Appendix 2-3 and the lab data sheets included in Appendix 2-4. The description of soils outside the disturbed area boundary or on the steep slopes within the boundary have been taken from the SCS (Jensen, 1988).

All topsoil will be removed (estimated at approximately 18 inches - 1,200 cyds) from the disturbed area expansion area (Plate 5-2). A sample will be taken of the topsoil and submitted for analysis for the parameters listed in Section 233.300.

In areas where topsoil thicknesses of less than 6 inches are encountered, the topsoil and underlying unconsolidated materials will be removed and stockpiled together, including the soil salvaged in Pace Canyon during construction of the fan portal site. The entire mixture will be treated as topsoil in compliance with R614-201-234.300. The recovery of topsoil and substitute topsoil will be maximized in both disturbed and undisturbed soils.

The substitute topsoil generated during mine construction, as discussed in Section 224, will be treated as topsoil and stored accordingly.

No facilities will be constructed and no soil disturbance is planned in conjunction with the incorporation of the SITLA lease (T13S R13E, Section 29, Portions of Section 17, 20, 21, 28 and 30) into the Dugout Canyon Mine permit area.

#### **231.200 Suitability of Topsoil Substitutes/Supplements**

See Section 233.200.

#### **231.300 Testing of Topsoil Handling and Reclamation Procedures Regarding Revegetation**

SCM will exercise care to guard against erosion during and after application of topsoil and will employ the necessary measures to ensure the stability of topsoil on graded slopes. Erosion control measures will include surface roughing and erosion mat placement on slope areas thought to be unstable. SCM will fill, regrade, or otherwise stabilize any rills or gullies deeper than nine (9) inches which form in areas which have been regraded and topsoiled. The areas adjacent to any rills or gullies which have been filled, regraded or otherwise stabilized, will be reseeded or stabilized accordingly.

As requested by the Division, a non-biased, third party, professional soil scientist will be on-site when available at the Dugout Canyon Mine facilities during soil salvage to monitor and supervise soil salvage operations for the purpose of maximizing soil salvage volumes and quantities.

At the Pace Canyon fan portal site, the topsoil and underlying unconsolidated materials will be removed and stockpiled together. The entire mixture will be treated as topsoil in compliance with R614-201-234.300. The recovery of topsoil/growth medium will be maximized at the site.

**TABLE 2-2**  
**TOPSOIL AND SUBSTITUTE TOPSOIL VOLUMES**

AREA	MATERIAL TYPE	Volume Estimated at Salvage
NORTHWEST FACILITIES AREA (AREA 2)	TOPSOIL/OVERBURDEN	1,653 CY
COAL STORAGE AREA (AREA 3)	TOPSOIL/SUBSOIL	4,869 CY
SEDIMENT POND, SLOPE AREA, AREAS BETWEEN ROAD AND CREEK (AREAS 4, 6, 7)	TOPSOIL/SUBSOIL	20,118 CY
WATER TANK AREA (AREA 8)	TOPSOIL/SUBSOIL	247 CY
SLOPE EAST OF COAL STORAGE PILE (AREA 9)	TOPSOIL/SUBSOIL	333 CY
GILSON WATER WELL*	TOPSOIL/SUBSOIL	134 CY
SMALL SUBSTATION	TOPSOIL/SUBSOIL	140 CY
<b>DAB EXPANSION</b>	<b>TOPSOIL/SUBSOIL</b>	<b>1,200 CY</b>
<b>TOTAL</b>		<b>28,650 CY</b>
Topsoil/Subsoil Stockpile Survey		Cubic Yards
North Pile (1998), Includes Area 5 Soils		11,300
South Pile (1998)		13,939
Gilson Well Pile (2006)		134

from contaminants and unnecessary compaction that could interfere with vegetation, the stockpiles will be isolated (Section 231.400). A topsoil storage sign will be installed at the stockpiles.

Soils removed from the Dugout Canyon Mine will be stockpiled in the Soldier Canyon Mine topsoil stockpiles. The Dugout Canyon Mine soil stockpiles will be constructed in such a manner as to allow equipment access to the existing Soldier Canyon Mine soil stockpiles without causing disturbance to the Dugout Canyon Mine soils. Specifically, the piles will be separated by a distance great enough for equipment to access any stockpile. Furthermore, a continuous berm will be constructed around the stockpile to further separate the soils from the two mines. The berm will be constructed as specified in Appendix 7-9. **Topsoil removed during the disturbed area expansion in 2006-2007 will be stockpiled with the "Gilson Well" soils, within the bermed storage area. These soils are stored at the south end of the topsoil stockpile site.**

Cheat grass has apparently invaded much of the area adjacent to the designated Dugout Canyon Mine stockpile area. The operator will endeavor to maintain, to the extent possible, the stockpile's interim vegetation in a noxious weed- and cheatgrass-free state. Measures that can be taken to ensure this include treating areas with a commercially available selective herbicide that targets undesirable weeds and/or grasses. If infestations of undesirable vegetation are extensive, treatment of the infested areas with nonselective systemic herbicides may be necessary. If the later case occurs, the areas treated will be reseeded with the appropriate interim seed mix designated for the stockpile and/or adjacent disturbed area. Additionally, application of pre-emergent herbicides may be necessary to control cheatgrass and/or noxious weeds. Since pre-emergent herbicides can stop the germination of desirable vegetation, reapplication of these species may be necessary. The proper treatment method of the infested areas will be discussed with the Division prior to implementation.

**Wind and Water Erosion Protection.** All stockpiles will be protected from wind and water erosion by prompt establishment and maintenance of a vegetative cover. Berms will be constructed around the stockpile to help trap sediment runoff from the stockpiles.



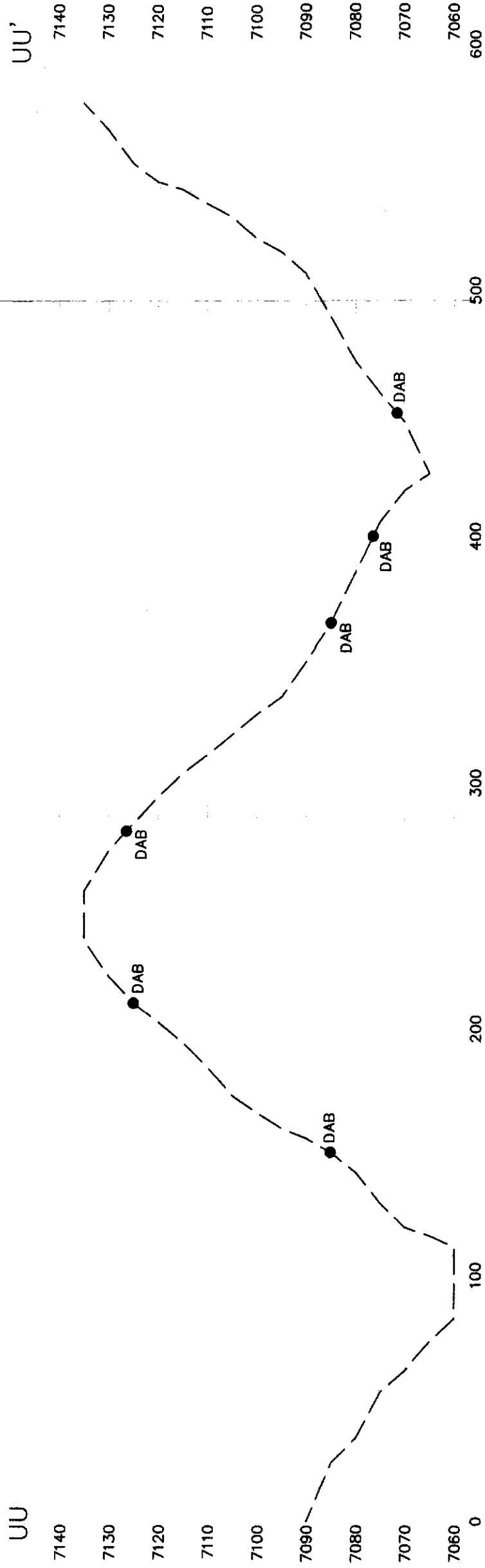
Within the disturbed area, any contaminated surface soil will be removed and stored during the final reclamation process. If the contaminated soils can not be rehabilitated, the material will be buried along with other contaminants. All backfill placed prior to topsoil and substitute topsoil spreading will be ripped or loosened by the methods described in this section and in Section 341.200 of this M&RP.

Soil previously removed from the Dugout Creek channel walls during culvert construction will be returned to the channel area during final reclamation, to the extent possible. If after construction and resoiling of the channel area an excess of "channel" soil exists, it will be appropriately distributed within the disturbed area to increase topsoil thicknesses.

**Soil Thickness.** The Dugout Canyon topsoil will be distributed to the disturbed areas illustrated on Plate 5-5. Topsoil will not be distributed on the primary road or the floor of the stream channel. During reclamation, the topsoil will be allowed to settle and attain equilibrium with its natural environment. This procedure will be followed for all areas in which facilities such as ancillary road beds, mine pads, and building sites are to be abandoned.

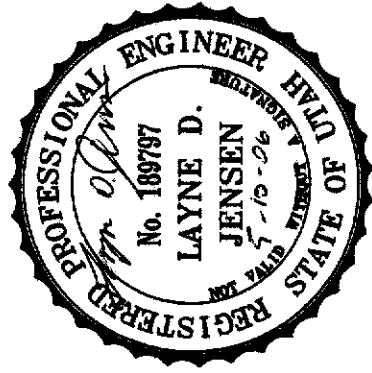
Based on the results of the sampling and analysis of soil test pits TP-1, 4, 5, 6, 7, 8, and 9 and the description of pits 14 and 14A, approximately 28,650 CY of topsoil/growth media will be available to be distributed on reclaimed surfaces within the disturbed area boundary (Appendix 2-6). An estimated 15.2 acres within the disturbed area will receive topsoil. Based on the estimated quantity of available topsoil and the area to be covered, approximately 13.3 inches of topsoil will be placed in the reclaimed areas.

The Pace Canyon topsoil (approximately 18") will be distributed to the disturbed areas illustrated on Plate PC5-5. Topsoil will not be distributed on the realigned road segment or topsoil stockpiles. The area above the portal and the channel diversion area will have topsoil stripped and stockpiled immediately adjacent to these areas temporarily (Plate PC5-2). This topsoil will be surrounded with a silt fence for protection until the soil can be replaced, mulched, gouged and reseeded. The replacement will immediately follow the completion of construction of the portal and channel



LEGEND

- EXISTING GRADE
- DAB
- DISTURBED AREA BOUNDARY



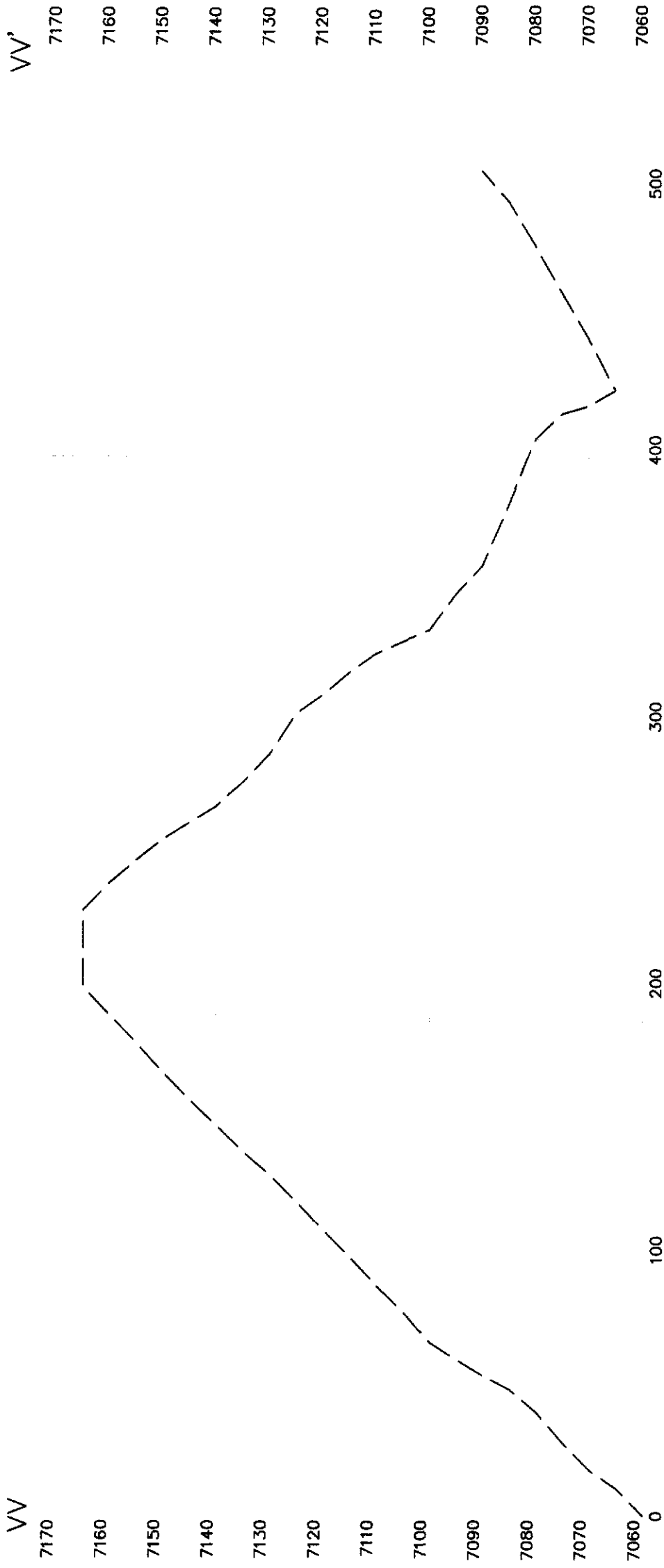
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HORZ: 1" = 25'

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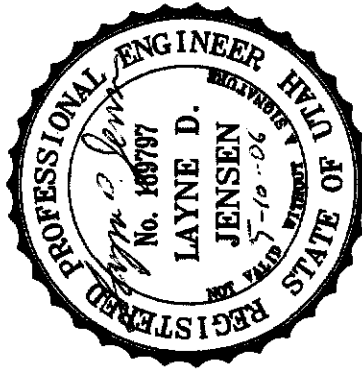






LEGEND

--- EXISTING GRADE



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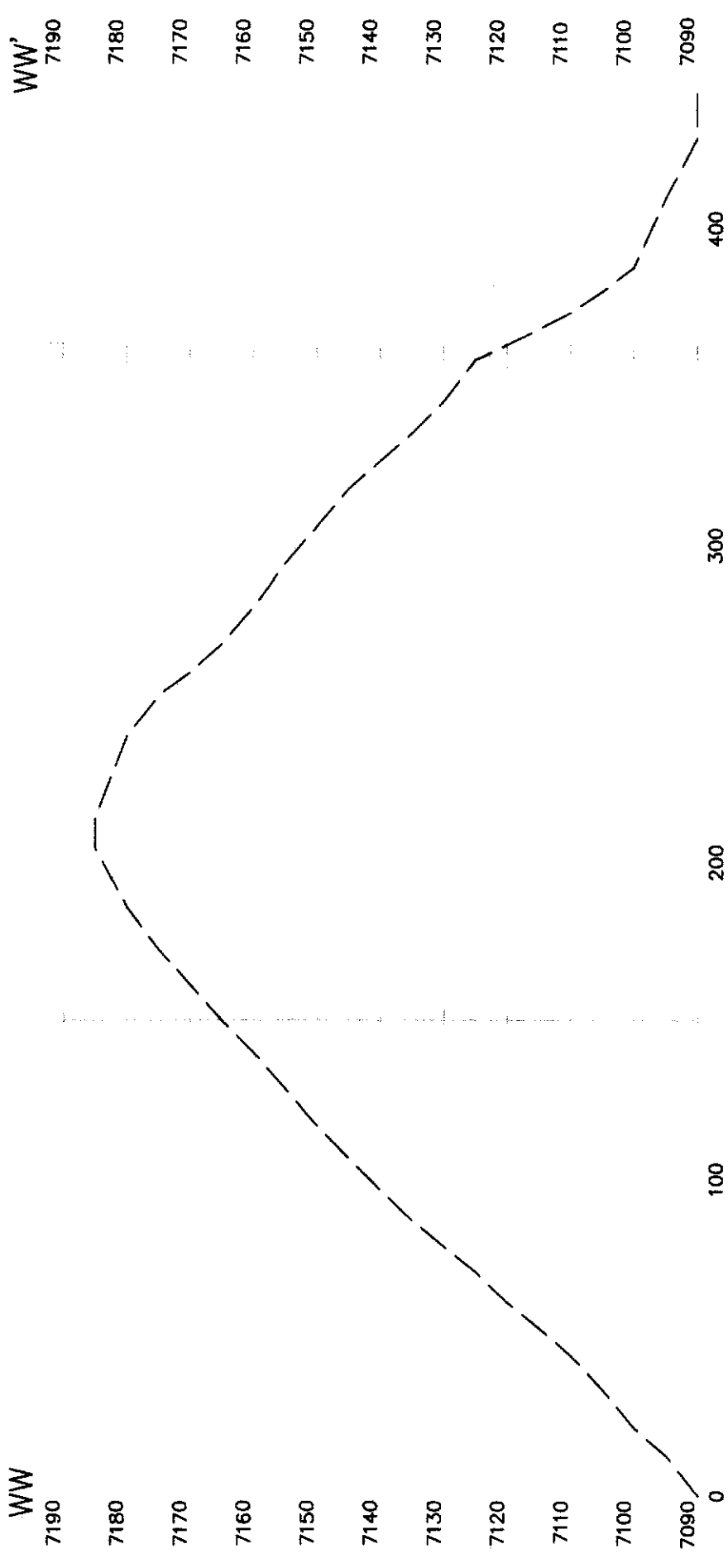
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PLATE 5-3 (8). SURFACE FACILITY CROSS SECTION

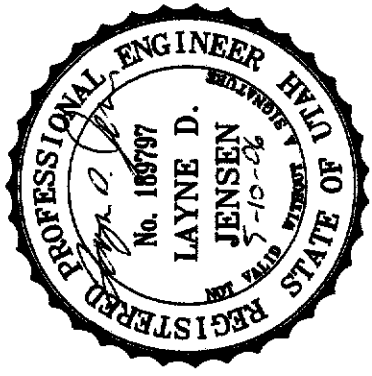
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--- EXISTING GRADE



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PLATE 5-3 (9). SURFACE FACILITY CROSS SECTION